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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/690,590	10/18/2000	MINORU KATAYAMA	107612	2593

25944 7590 11/14/2002
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ALEXANDRIA, VA 22320

EXAMINER

CYGAN, MICHAEL T

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 11/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/690,590	KATAYAMA ET AL.
	Examiner	Art Unit
	Michael Cygan	2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 05 November 2002.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-8 and 10-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-8 and 10-12 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 05 November 2002 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>16</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05 November 2002 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 8 and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 90/12277 (Bielle). Bielle discloses a surface texture measuring machine having a stage movable in the Y-axis direction (see table [9] with grooves for movement in Y-direction) and capable of seesawing in a Z-direction (see Figure 7 and pages 19-20) on a fulcrum [15]. The machine has a displacement detection means [5] which is

movable in the X-axis direction for measuring z-axis displacement on a workpiece [6]; see abstract and Figures 1, 7, and 10. Bielle discloses adjusting the orientation of a workpiece by measuring three points on the piece, calculating the difference in the Z-position of the points from a desired position, displaying the correction amount on a screen, and manually operating an adjustment means (e.g., points of action 130,131) to correct the orientation. As shown in Figure 7, the device has a fulcrum [15] rotatable at least in the X-Z axis, in addition to calculation, output, and adjustment means (pages 19-20). Note that the desired reference position (a fulcrum-point of action line) is shown to be horizontal (i.e., parallel to the base support) in Figure 10. See also abstract. Further note that Bielle teaches preprogrammed start and end points (Figures 14 and 15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuda (JP 08-029153) in view of WO 90/12277 (Bielle). Fukuda discloses a surface contour measurement device (Figure 1) for measuring

a workpiece having an edge line (Figure 6) having a rotatable stage which is movable in the X- and Y-axis directions and has an inclination correction means (titubation device [42] rocking the object on titubation shaft (fulcrum)); see Figure 1 and English language translation pages 2-5, especially paragraphs 9 and 25. Fukuda discloses a measurement means [10A] being controlled by a measurement controller [50] which comprises measurement of a surface from a start point to an end point (which inherently have max/min Z-axis endpoints in the inclination measurement) to calculate an initial orientation, and input of X-axis, Y-axis, and swivel angle values to an error correction means, and further discloses adjusting the rotation, inclination, and Y-axis movement of the piece to correct the piece to a desired alignment based upon a result from an error calculation means; see especially Figure 2 and page 4 of English language translation and paragraphs 23, 33, and 39 of the original document.

Fukuda discloses the method of automatic measurement of a surface from a start point to an end point (which inherently have max/min Z-axis endpoints in the inclination measurement) to calculate an initial orientation, and input of X-axis, Y-axis, and swivel angle values to an error correction means, and further discloses adjusting the rotation, inclination, and Y-axis movement of the piece to correct the piece to a desired alignment based upon a result from an error calculation means; see especially page 4 of English language translation and paragraphs 23, 33,

and 39 of the original document. It is noted that Fukuda has predetermined X-axis start and end coordinates (as in Figure 3) which are programmed into the automatic controller which operates the X-axis slider. With respect to claims 4-7, Fukuda teaches the claimed invention except for the use of a fulcrum-based, manually operated leveling device having a micrometer knob and a display of the orientation correction amount. Bielle teaches the use of a fulcrum-based, manually operated leveling device having a micrometer knob and a display of the inclination orientation correction amount in a surface roughness measurement device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a fulcrum-based, manually operated leveling device having a micrometer knob as taught by Bielle in the invention of Fukuda to orient the piece relative to the displacement detecting means, since this would advantageously provides a structure shown to be capable of positioning of the preferred measurement surface of the piece relative to the detecting means.

With respect to claims 1-3, neither Bielle nor Fukuda disclose manual displacement in the Y-axis direction in accordance with a displayed swivel correction angle. Fukuda discloses only the automatic operation of Y-axis and swivel correction due to error values (page 4, paragraph 25 of English abstract), and states that this method is superior to the prior known "hand regulation by the operating personnel". Fukuda thus "teaches away" from manual operation, but discloses that such operation is known in the prior art. As stated in *In re Gurley*,

"the nature of the teaching is highly relevant and must be weighed in substance. A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use", *In re Gurley*, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed Cir. 1994). See also MPEP 2145(X)(D)(1). In the present case, Fukuda discloses manual operation as known, but somewhat inferior for the same use as automatic operation. The use of manual operation of inclination angle in Bielle further supports the usefulness and obviousness of manual operation of system parameters. Therefore, it would have been obvious to one having ordinary skill in the art to use manual operation of Y-axis correction, which is disclosed to be known in the prior art by Fukuda, in the invention of Fukuda in view of Bielle to correct the orientation of a workpiece, since this would advantageously allow correction of positioning of the preferred measurement surface of the piece relative to the detecting means in the Y-axis direction. The use in the invention of Fukuda of micrometer knobs as taught by Bielle for manual operation would have been obvious to one having ordinary skill in the art at the time the invention was made, since micrometer knobs are well known for use in manual position adjustment and perform that function in Bielle for the purpose desired by Fukuda.

Response to Arguments

4. Applicant's arguments filed 04 November 2002 have been fully considered but they are not persuasive. Applicant argues that Bielle does not

disclose an operation amount calculated from a center focus. Applicant further argues that Bielle discloses a relative operation amount rather than an absolute operation amount as claimed by applicant. However, Bielle performs an operation to render the sample surface parallel to a reference triangle. The operation consists of determining the differences in altitude between the measured surface and the reference surface at three points, and then altering the micrometer heads at those locations to the determined amount. See page 10, lines 6-23. This is an absolute quantity determination, and does not involve comparison of different measured values to each other. Note that the desired reference position is shown to be horizontal (i.e., parallel to the base support) in the depiction of the desired inclination angle of the surface probe mechanism as detailed Figure 10. This desired reference triangle is the "center locus" or "center focus" claimed by applicant.

5. With regard to applicant's argument of certain benefits of manual operation, advantages of manual operation over automatic operation are well known in the art as evidenced by the use of manual operation in the art (note the example provided by Bielle), and would be obvious to one having ordinary skill in the art. Note further the "Notification of Reason(s) for Refusal" (JPO 2002), which states that it is "not difficult for a person skilled in the art to change driving mechanisms of the Y-axis table, the R-

axis table, and the rotation table constituting the stage with manual mechanisms in order to adjust the attitude of the workpiece by the manual mechanisms".

6. With regard to the use of an absolute quantity of swivel angle correction, Fukuda teaches this as noted on paragraph 25 of the English language abstract, "it is based on the calculation result by error calculation section...the posture of the measuring [object] 17 is finally correctable to a criteria posture". See also paragraph 24. Applicant's amended language "an absolute quantity relative to the X-axis" does not distinguish over the teaching of Fukuda; the calculated error angle which is sent to the revolution device [41] is in the X-Y plane, and thus is an angle "relative to the X-axis". See particularly paragraphs 25, 33, and 39 of Fukuda. Furthermore, it is noted that Fukuda has predetermined X-axis start and end coordinates (as in Figure 3) which are programmed into the automatic controller which operates the X-axis slider. Further note that Bielle teaches preprogrammed start and end points (Figures 14 and 15).

7. With regard to the teaching of a visual display, Bielle discloses adjusting the orientation of a workpiece by measuring three points on the piece, calculating the difference in the Z-position of the points from a desired position, displaying the correction amount on a screen, and manually

axis table, and the rotation table constituting the stage with manual mechanisms in order to adjust the attitude of the workpiece by the manual mechanisms".

6. With regard to the use of an absolute quantity of swivel angle correction, Fukuda teaches this as noted on paragraph 25 of the English language abstract, "it is based on the calculation result by error calculation section...the posture of the measuring [object] 17 is finally correctable to a criteria posture". See also paragraph 24. Applicant's amended language "an absolute quantity relative to the X-axis" does not distinguish over the teaching of Fukuda; the calculated error angle which is sent to the revolution device [41] is in the X-Y plane, and thus is an angle "relative to the X-axis". See particularly paragraphs 25, 33, and 39 of Fukuda. Furthermore, it is noted that Fukuda has predetermined X-axis start and end coordinates (as in Figure 3) which are programmed into the automatic controller which operates the X-axis slider. Further note that Bielle teaches preprogrammed start and end points (Figures 14 and 15).

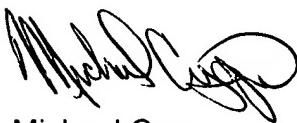
7. With regard to the teaching of a visual display, Bielle discloses adjusting the orientation of a workpiece by measuring three points on the piece, calculating the difference in the Z-position of the points from a desired position, displaying the correction amount on a screen, and manually

operating an adjustment means (e.g., points of action 130,131) to correct the orientation. Such display is an integral part of the teaching of manual operation of Bielle applied to the invention of Fukuda; an operator requires some sort of display to know what manual operation is required.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cygan whose telephone number is 703-305-0846. The examiner can normally be reached on 8:30-6 M-Th, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 703-305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.



Michael Cygan
November 13, 2002